E & A

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THE CORN LEAF-TIER, LEREMA ACCIUS S. & A.*

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The corn leaf-tier, *Lerema accius* S. & A., is one of a large number of corn feeding species of insects which have never been known to cause appreciable damage, but are still a potential pest of this plant and of other economic grasses. It belongs to the *Hesperidae* or skipper butterflies, several of which, in the South are recognized as pests, among them the Bean Leaf Folder *(Eudamus proteus* L.), and the Larger Canna Leaf Roller *(Calpodes ethlius* Cramer).

The original description of the adult was published in a paper on the "Lepidopterous Insects of Georgia" by Smith and Abbott in 1797 under the name of *Papilio accius.* In 1872 Mr. S. H. Scudder erected the genus *Lerema* with this species as the genotype. The most complete account so far published is one by this same author in his "Butterflies of New England" in 1889. The records of the Bureau of Entomology regarding this species are very meager. Mr. R. A. Vickery reported finding a single small larva on corn at Brownsville, Texas, Mr. W. R. McConnell noted it at several points in Mississippi, and Mr. W. H. Larrimer found larvae on two species of grasses at Chickasha, Oklahoma. The above records, a few other scattered observations and a series of rearings at Lakeland, Florida, during the winter and spring of 1913 furnish the material for the following paper.

It is impossible to fix definite limits for the range of this species. It was first described from Georgia, the exact locality not being indicated. An attached note adds that "It is also found in Virginia." Scudder's map of its distribution shows it

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to occur throughout a narrow strip of territory along the Gulf and Atlantic coasts as far north as Massachusetts, and another along the Mississippi River as far north as southern Illinois. It has been found by Mr. Larrimer at Chickasha, Okla., by the writer at Chattanooga and Leadvale, Tenn., and Clemson College, S. C., all outside of the above limits and indicating that its distribution is more general throughout the Southeastern states than Scudder's map leads one to believe. Like several of its close relatives it is probably of tropical origin and habit and if so its northern limit fluctuates from year to year with the severity of the winter and the conditions favoring northward flight during the summer.

The adult butterfly has a wing expanse of about 33 mm. and in color is a dark, warm brown with six more or less rectangular white spots on the fore wing of the female (in the male but four and these much smaller). Three of the six in the female are small and in a close, nearly straight row near the anterior margin about two-thirds out from the base of the wing; two others, of which the posterior is the larger, lie between this group and the hind margin of the wing, and the last at the upper edge of the cell. In different individuals the prominence of these markings varies considerably but their relative size and position are constant. The hind wing is uniform brown above, and beneath both fore and hind wings shade to purple along the distal margins. The butterfly is a strong flier and has the erratic, zig-zag flight characteristics of its family.

The eggs are laid singly and widely scattered, usually on the lower but sometimes on the upper surface of the leaf. Seldom is more than one found on a plant and we have never seen two on the same leaf. They are white with a pearly luster, subhemispherical in shape and about two-thirds as high as wide, with the basal angle rounded, diameter 1.2 mm., height .8 mm. The chorion is finely reticulated. The rounded basal angle serves to distinguish this from the otherwise very similar egg of *Calpodes ethlius* in which the wall joins the base with a sharp right angle.

Since oviposition has never been observed, the exact length of the incubation period is not known. Of eleven eggs taken in the field at various times, seven hatched in nine days, two in six days, and two in five days, indicating that nine days is probably the normal period. A day or two after being laid the

egg takes on a creamy tinge, on the sixth day a faint mottling appears near the apex and on the eighth day the dark head of the young larva can plainly be seen through the shell. The embryo lies coiled around the circumference of the egg with the head a little to one side of the center. The first break in the shell is made by pressure of the mandibles and the larva then proceeds to cut an irregular hole in the apex, rotating within the egg during the process. When the opening is as large as its head the larva emerges. The entire operation occupies some time, one larva which broke the shell at 8:00 A. M. having just released itself at 3:00 P. M. In the meantime the head of this larva changed from chocolate-brown to glistening black. The empty egg-shell is translucent white, waxy and parchment-like in texture except the flat base which is transparent.

After a brief survey of the immediate vicinity the newly hatched larva returns to the egg shell and consumes it, leaving only the disk-like base which it cannot be induced to touch even when it has been loosened from the leaf. This little glistening disk can almost invariably be found somewhere on each infested plant. After breakfasting on the egg-shell the small larva selects a location on the upper surface of the leaf, near the edge and begins to construct its retreat by placing a layer of silk fibers on the surface. The effect of this is quickly seen in the gradual curling of the blade. When a groove has been thus formed the opposite edges are connected by a silk fiber which bridges the concavity. This fiber is added to until it forms a strong strand and its contraction draws the edge over until it touches the surface of the blade, after which other similar attachments are formed at short intervals until a complete tube, open at both ends is formed. In the finished retreat of a full grown larva there are from five to twelve such fastenings. In the instances observed by the writer the fold was always over onto the upper surface of the leaf, but Mr. McConnell has noted that at Greenwood, Miss., larvae feeding on sorghum folded the leaf upward and downward in about equal numbers. The earlier retreats are generally near the tip. Later the edges of a narrow leaf may be drawn together or the margin drawn over to the midrib at any point along the blade. When the roll is complete the larva cuts a deep narrow notch into the leaf at each end and seals the ends. The skill with which the weak and apparently helpless larva manipulates the thick, stiff corn leaf is remarkable.

During the day the larva never leaves its refuge but feeds on the leaf close to the ends of the tube or on the tube itself. At night other parts of the leaf or even other leaves are eaten. When one retreat is outgrown or consumed another is constructed near by. The feeding is spasmodic, sometimes nothing being eaten for two or three days and then in a night almost all of a small plant consumed. When ravenously hungry a larva will cut holes and notches in a leaf without waiting to construct a retreat. The larva at any age seems unable to cling to the naked leaf surface but when moving about always swings its head from side to side laying down silk fibers to which it clings. In this manner it readily climbs a perpendicular glass surface. Excrement is ejected with a snap which sends it to a distance of two or three feet from the plant.

The newly hatched larva is pale yellow with glistening black head and with a single narrow black cervical band separated a short distance from the head and running down on each side to the latero-ventral margin where it ends in a small black dot. The neck-like appearance, caused by a decided constriction of the body just behind the head, is more conspicuous in the later stages as is also the vertical position of the head. The body is provided with scattering minute shining hairs, a pair of which projecting caudad are somewhat larger than the rest. As the larva feeds it assumes a greenish color which, in the second and later instars, is covered with a glaucous, frost-like overcolor. A darker green meso-dorsal line appears and the caudal end of the body becomes flattened and boat-shaped, covering and concealing the caudal pair of legs. A pair of black dots on the third segment from the caudal end becomes more conspicuous with each succeeding molt. The surface of the head becomes granular and sparingly hirsute and under a lens the skin of the body is seen to be covered with minute black bristles.

There are five instars which may be distinguished by the head widths as given below in millimeters:

Instar	Average	Maximum	Minimum
First	0.6249	0.6530	0.6063
Second	0.9001	0.9328	0.7929
Third	1.2599	1.3059	1.2126
Fourth	1.7492	1.8656	1.5858
Fifth	2.3599	2.5186	2.2387

These measurements were taken from a large number of head casts and while there is considerable variation within each in-

(Continued on Page 10)

A NEW AND REMARKABLE FIG MIDGE

By E. P. FELT, State Entomologist, Albany, N. Y.

The remarkable form described below differs from all other gall midges known to us by the forty-one antennal segments in at least one sex, presumably in both, and in addition possesses structural peculiarities which necessitate the erection of a new genus.

Ficiomyia n. g.

The genus runs in our Key to the Chilian Scheueria Kieff, from which it is easily separated by the much greater number of antennal segments, the occurrence of distinct stems on the flagellate antennal segments of both sexes, the absence of marked reticulations in the circumfila and the claws being distinctly longer than the pulvilli. The male genitalia present striking peculiarities, evidenced in part by the subapical insertion of the terminal clasp segment.

Type F. perarticulata n. sp.

Ficiomyia perarticulata n. sp.

The insects were reared from the fruits of *Ficus aurea* by G. F. Moznette of the Federal Bureau of Entomology, stationed at Miami, Fla., and forwarded under date of February 9, 1922. Unfortunately, these specimens were somewhat broken in transit and as a consequence, the descriptions given below are not complete in certain details. The larger reddish females were much more abundant in the sending than the few smaller, yellowish males.

Male:—Length 2 mm. Antennae probably one-fourth longer than the body, sparsely haired, light fuscous yellowish, probably forty-one segments, the fifth with a stem about three-fourths the length of the sub-cylindric basal enlargement, which latter has a length almost twice its diameter, basally a sparse whorl of moderately stout setae, sub-apically a somewhat thicker whorl of long, bent setae; low circumfila occur at the basal third and apically; terminal segments missing; palpi probably uniarticulate; mesonotum fuscous yellowish; scutellum and postscutellum yellowish; abdomen fuscous yellowish; wings hyaline, rather thickly clothed with fuscous scales; sub-costa uniting with the margin at the basal third, the nearly straight third vein at the apex of the wing, the fifth at the basal fourth, its branch at the basal third; halteres pale yellowish; coxae fuscous yellowish; legs mostly dark straw; the distal tarsal segments pale straw; claws long, rather stout, unidentate; the pulvilli about one-half the length of the claws (Unguial characters probably true of all

legs and for both sexes); genitalia, basal clasp segment moderately long, stout, with a spud shaped apical process having a length nearly equal the diameter of the segment; terminal segment sub-apical, moderately stout, slightly curved and with a stout, chitinous spur apically; dorsal plate long, broad, very deeply and triangularly divided, the lobes broadly triangular and thickly clothed apically with long, stout setae; ventral plate long, very deeply and roundly emarginate, the slender, subacute lobes with a length fully six times their width; harpes moderately long, broad, deeply and triangularly emarginate; the lobes broad, and broadly rounded apically; style long, broad, broadly rounded apically.

Female:—Length 2.5 mm. Antennae probably shorter than the body, sparsely haired, fuscous yellowish, forty-one segments, the fifth with a stem one-third the length of the sub-cylindric basal enlargement, which latter has a length one-fourth greater than its diameter, basally a thick whorl of long, stout setae extending to the tip of the segment; low circumfila at the basal third and apically; terminal segment slightly produced, roundly cuboidal and with a length nearly one-half greater than its diameter. Palpi: uniarticulate, the one segment having a length nearly twice its diameter and bearing apically a sparse group of rather long, stout setae; mesonotum dark brown; sub-median lines yellowish; scutellum dark brown; postscutellum yellowish brown; abdomen dark reddish brown; halteres pale yellowish; coxae reddish brown; femora a variable fuscous; tibiae and tarsi dark straw; the ovipositor about one-fourth the length of the abdomen, fuscous yellowish; terminal lobes with a length about three times the width, broadly rounded apically and with a few sparse setae. Other characters probably as in the male.

Type Cecid. A 3228, N. Y. State Museum.

ANOTHER CAMPHOR THRIPS

J. R. WATSON

Karnyia gen. Nov. *(Phloeothripidae, Cryptothripinae).*

Head longer than broad and longer than the prothorax. Wings comparatively weak and short; membrane slightly narrowed in the middle. Tibiae without teeth; tarsi of ♀ armed with a large curved tooth; fore femora thickened in both sexes, without teeth near the apex. Antennae 8-segmented, segments 6 and 7 not united. Ocelli present, widely separated. Labrum sharp-pointed and extending beyond the remainder of the broadly-rounded mouth cone. Bristles of the last abdominal segment long and slender, extending beyond the tube, at least in the ♀. Intermediate antennal, segments little longer than the others. Cheek roughned but without bristles. The new genus differs from *Megalomerothrips* (Watson) in that the intermediate antennal segments are not elongated and the male lacks the long tarsal tooth.

Type K. weigeli.

K. weigeli, n. sp.

♀. Color uniformly dark brown except the fore tibiae and tarsi and antennal segment 3, which are brownish yellow.

Measurements: Total body length 1.4 mm. (1.2 to 1.6). Head, length 0.17, width 0.14 mm.; prothorax, length 0.12, width (including coxae) 0.25 mm.; mesothorax, width 0.23 mm.; abdomen, greatest width 0.28 mm.; tube, length 0.11, width at base 0.056, at apex 0.029 mm.

Antennae: total length 0.29 mm.

Segment	1	2	3	4	5	6	7	8
Length	32	41	47	48	43	36	42	28
Breadth	27.5	27	26	28	22	21	20	12 microns

Head about 1.2 longer than wide and considerably longer than the prothorax, smooth except for a few longtitudinal lines; cheeks slightly arched, slightly converging posteriorly, roughened; post-ocular bristles about as long as the eyes, knobbed, pale, no other prominent bristles on the head. *Eyes* rather small, scarcely a third the length of the head, roughly triangular in outline, dark. *Ocelli* large, yellowish brown, well separated; posterior pair situated opposite the middle of the eyes, close to, but not touching, their margins; bordered by narrow orange crescents. *Mouth cone* reaching .6 the distance across the prosternum. *Antennae* about 1⅔ as long as the head, segment 1 concolorous with the head; 2 lighter brown, urn-shaped with a broad pedicel; 3 yellowish-brown, almost triangular; 4 brown but lighter than 5-8 which are uniformly dark brown, conspicuously the largest segment; 6 conspicuously short and narrow, ovoid; 7 barrel-shaped; 8 conical. Bristles and sense cones pale and inconspicuous.

Prothorax (including coxae) fully twice as wide as long, trapezoidal in outline; posterior angles well rounded, bearing a single pale, knobbed bristle of medium length, a somewhat longer one on each coxa, also knobbed; a minute bristle on each anterior angle.

Mesothorax somewhat narrower than the prothorax, sides converging sharply posteriorly. Metathorax, sides nearly straight and parallel. Wings short, membrane reaching to about the middle of the abdomen, colorless except for a brown area at the base; fringing hairs long but sparse, 2 or 3 interlocated ones. Legs short; fore femora much thickened, with a long bristle and two shorter ones on the inner side; fore tarsus with a curved tooth, which is variable in size.

Abdomen cylindical, segments 2-9 bearing on each posterior angle a knobbed, almost colorless bristle, which become progressively larger posteriorly; segments 7-9 bear in addition from one to three pairs of pointed bristles, two pairs of these on the ninth segment are much longer than the tube, a pair of knobbed bristles nearly or quite as long as the tube arises from the ninth segment adjacent to the base of the tube.

Male. Somewhat larger than the female; prothorax much smaller. General color brownish yellow, head, prothorax, and fore legs yellowish brown, pterothorax and middle and hind legs light brownish yellow with darker spots; abdominal segments 1 and 2 light yellow, 3, 4, 8, and 9 deep yellow, 3 and 4 with brownish anterior margins; 5 light brown, 6 dark brown, 7 yellowish brown, 5 and 6 forming a conspicuous dark band; tube brownish yellow. Fore wings banded with brown in the middle and at the tips; no interlocated hairs. Hind wings shaded with brown but not banded. Fore femora enlarged but much smaller than those of the female. Terminal bristles of the abdomen and of the tube much shorter than in the female. Labrum shorter, barely exceeding the remainder of the mouth cone. No tarsal teeth.

Described from two females and a male collected by Mr. C. A. Weigel at New Orleans, La., February, '22, from camphor infested with camphor scale *(Pseudaonidia duplex)*, and a single female and larva collected from camphor at New Orleans by Mr. W. W. Yothers, June 24, 1921. Type in the author's collection.

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A CORRECTION. Thru an oversight the last number of the ENTOMOLOGIST was marked No. 3 of Vol. V instead of No. 4.

MOSQUITO CONTROL IN FLORIDA

A very valuable bulletin has just been published by the Florida State Board of Health. It is entitled "Mosquitoes and Mosquito Control," by Geo. W. Simons and Geo. F. Mosnette.

In a recent publication of the Russell Sage Foundation, "Survey of Florida County Jails," by B. C. Riley of the General Extension Division, University of Florida, the statement is made that "only half the jails have any screens." This is indeed a deplorable and dangerous condition of affairs. Not only is an unscreened jail a cruel injustice to the prisoners but also a constant menace to the health of the community in which it is situated. It could easily serve as a center of infection from which malaria might spread over the town.

MEETINGS OF THE FLORIDA ENTOMOLOGICAL SOCIETY

March 27. The Society met with the Horticultural Seminar in the office of the Nursery Inspector, Pres. Floyd of the Seminar in the chair. Members present: Berger, Burger, Floyd, Lord, Montgomery, Stone and Watson. Prof. Watson read a paper on the "Correlation Between Sunspot Maxima and Florida Freezes." This was followed by a general discussion. Dr. Burger discussed Current Notes on Plant Pathology with a review of Smith's "Bacterial Diseases of Plants." Mr. Goodwin was elected Business Manager of the ENTOMOLOGIST in the place of Dr. E. W. Berger, resigned. O. T. STONE, Sec'y Pro. Tem.

April 24. The Society met in the Plant Board offices with Pres. Stirling in the chair. Members present: Berger, Beyer, Brown, Lord, Merrill, Montgomery, Newell, O'Byrne, Stirling, Watson. Mr. Brown gave an illustrated paper on "Protecting Florida's Horticulture."

May 22. The Society met with the Horticultural Seminar, Dr. E. W. Berger in the chair. Major W. L. Floyd, Prof. of Horticulture in the University; Reginald Hart of the Plant Board, stationed at Ft. Lauderdale; Mr. Ed. L. Ayers, and Prof. J. S. Rogers were elected to membership in the Society. Mr. A. H. Beyer was elected Business Manager of the ENTOMOLOGIST. Mr. Ayers gave the paper of the evening on Bordeaux Mixture. He discussed the proper method of making the mixture and the causes of burning.

PERSONALS

R. N. Van Zwaluwenburg, entomologist of the United Sugar Companies, Los Mochis, Sinaloa, Mexico, was visiting Mr. Merrill, May 28. He was on his way to Cuba to collect parasites of the Sugar Cane Moth Borers.

The position of Extension Entomologist and Pathologist of the Agricultural Extension Division has been filled by the appointment of Mr. Ed. L. Ayers of Texas. Mr. Ayers has had much experience in Texas as Nursery Inspector and with commercial horticultural firms.

Prof. J. S. Rogers, head of the Department of Biology in the University, has left for Michigan on his summer vacation.

Mr. O. T. Stone of the Nursery Inspection Office has moved into his new house on West Union street.

ANOTHER APHID FROM GAINESVILLE

In connection with the host plant list of Gainesville aphids by Mr. Mason, published in our last issue, Mr. Geo. G. Ainslie calls our attention to *Carolinaia cyperi* Ainslie, the original description of which was published in the Canadian Entomologist March, 1915. This was collected from nut grass at Gainesville by Mr. Ainslie and is probably the species Mr. Mason records on page 23 as *Carolinaia sp.*

A LADY-BEETLE NEW TO FLORIDA

Mr. Geo. F. Merrill adds to the list of Florida Coleoptera the white lady-beetle *Olla abdominalis* Say. It was sent in from Tampa. Its range has hitherto been given as Indiana to Texas and west.

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star, they do not overlap. In the first two instars the head is black, in the last two it is strikingly banded with white in the form of a narrow white band completely encircling the face on the margin and an inverted white V on each side of the face. In the last instar the vertex becomes reddish-brown. The third instar, however, presents both black heads and those striped with white as described for the fourth and fifth. This variation may be due to sex though this was not proven. Two larvae taken near together and having exactly the same head widths showed this difference.

As the larva prepares to molt the new head is formed within the body just caudad of the old one and shortly before the skin breaks there appear to be two distinct heads, even the markings of the new one showing through the epidermis. All the head casts are discarded unbroken except the last one which ruptures along the frontal suture. The pellicles of all except the last molt are very delicate and difficult to find. The larva is pale gray when freshly molted.

A day or two before pupation the larva becomes covered with a distinct while pulverulence. We have observed its first appearance as much as four days before pupation as two powdery white areas on the ventro-lateral margin of the body just caudad of the caudal pair of legs. From this point it spreads until the whole body is covered. It is all carried away with the last exuvium which remains attached to the head cast and is much more bulky than any of the preceding.

Twenty larvae were reared, nine of them completely through from egg to adult. The following table shows in days the length of the different instars and the total larval life.

No. of Larva	First instar	Second instar	Third instar	Fourth instar	Fifth instar	Total larval	Pupa stage	Probable egg	Total
*1							32		
*2					21		21		
*3							27		
4	7	5	8	17	10	47	16	9	72
5		6	12	13	13		13		
6	9	10	———	26	———	45	13	9	67
7							16		
8	———	———	45	———	———	45	12	9	66
9			9	6	24		16		
10	9	8	12	——	14 ——	43	13	9	65
11	11	——	23 ——	——	13 ——	47	14	9	70
12	7	——	22 ——	——	16 ——	45	13	9	67
13	——	14 ——	——	17 ——	5	36	16	9	61
14	8	8	———	23	———	39	13	9	61
15			12	8			15		
16	8	13	———	13	———	34	12	9	55
17		8	7	——	9 ——		14		
18			5	——	11 ——		16		
19		8	4	——	10 ——		11		
20		———	———	25	———		14		
Average	8.4	8.2	8.6	12	13	42.3	14	9	65

*These larvae were taken in Florida in November, 1912, and reared indoors at Nashville, Tennessee. They are not included in the averages.

When fully grown the larva covers a portion of the surface of a leaf with silk, suspends itself with a girdle about the thorax and pupates in a fold of the leaf, head downward in most cases. The larval skin breaks along the dorsal line from the head to about the second abdominal segment and is worked back by the pupa to its caudal extremity. The pupa is clear translucent green, 27 mm., long and 5 mm. wide. The anterior end is drawn out into a conical process 3 mm. long. The tongue lies in a straight slender case along the ventral side. Four or five days before emergence the wing pads and thorax assume an opaque whitish color, the eyes begin to darken and finally become deep

purple. The body retains its pale color until a few hours before emergence when it rapidly darkens from the head caudad. The pupal case remains as a crumpled dingy-white skin attached to the leaf. The duration of the pupal stage is shown in the table on page 11. An individual reared at Brownsville, Texas, by Mr. R. A. Vickery remained 11 days in the pupa and Mr. W. R. McConnell noted seven at Greenwood, Mississippi, which emerged in from seven to thirteen days. The maximum reached under out-of-door conditions in Florida was 16 days and the lengthened pupal period of the individuals reared at temperatures greatly below normal at Nashville indicates some power of adaptation to unfavorable conditions in this stage.

The writer has not had the opportunity to follow this species throughout an entire year in the field and all the data at hand concerning its seasonal history are fragmentary. February 11 a first instar larva was found at Brownsville, Texas. June 3 a nearly full grown larva and June 17 a pupa were taken at Greenwood, Mississippi. As early as June 1 a larva nearly full grown, was found at Marion, South Carolina, and September 16 full grown larvae and pupae were found at Clemson College, in the same state, on corn growing in an open greenhouse used as an insectary and at the same place on September 25 on upland rice growing in the open. At Orlando, Florida, larvae survived the mild winter of 1912-13 which was unusually warm even for Florida, there being insufficient frost to injure corn growing in the open. Mr. McConnell attempted without success to carry larvae and pupae through the winter at Greenwood, Mississippi, where they were exposed to freezing, but not severe, temperatures. The great susceptibility to frost of the similar and closely related species, *Calpodes ethlius*, and the probable tropical origin of this species lead to the conclusion that it cannot survive severe freezing weather. If such be the case the butterflies must travel for long distances and very rapidly to reach so early in the summer the localities mentioned above. The larvae in the table on page 11 are arranged in approximate chronological order from November, 1912 to June, 1913, and the figures indicate that the time required for development becomes less as the season advances. At none of the points where this species has been noted do the records indicate any distinct generations, furnishing further support to the theory of its tropical origin; for definite seasonal habits with long

quiescent periods, little or not at all affected by outside influences, are evidence of a long course of adjustment to conditions as found in the temperate zone.

In the spring of 1913 the generations were not distinct, for eggs and larvae of all sizes were found at the same time. The time required for the development of a generation, 65 days not including the time required for mating and oviposition after emergence, indicates that there may be several generations in Florida in one year, and at least two as far north as the species is likely to go. It is probable that it is a continuous breeder in its permanent range and that it travels northward every summer and is killed back every winter as is the case with several others of our economically important insects. However, the fact that *Calpodes ethlius* has reached and caused damage at Washington, D. C., may indicate similar possibilities for this species.

The original account gave American wisteria *(Bradleya frutescens* (L.) Britton) as the food plant but a note adds that it "is most commonly to be met with in the chrysalis state on the blades of Indian corn, *Zea mays,* in which it enfolds itself." Chapman found larvae in the leaves of *Erianthus alopecuroides* (L.) Ell. at Apalachicola, Florida. McConnell found several larvae feeding on sorghum at Greenwood, Mississippi, and one on a grass locally known as "tumble grass," probably *Panicum capillare,* at Memphis, Tennessee. The writer found larvae feeding in leaves of upland rice on the grounds of the South Carolina Experiment Station at Clemson College and a single one in a rolled leaf of Johnson grass *(Sorghum halepense)* at the Florida Experiment Station at Gainesville. All other records give corn as the food plant. Further observations are required to determine the possible food plants but, among cultivated crops, corn will probably head the list.

Three species of parasites have been reared, one from eggs and two from larvae.

Xenufens ruskini Gir. Of eleven eggs taken on corn leaves at Orlando, January 28, two were mottled and darker than the rest. On February 10 they had become very dark and on the 20th 12 minute hymenopterons emerged from one egg, and on the 25th, 10 from the other. They left through a small hole in

the apex. The empty shell retained its mottled appearance. Another egg in the same lot appeared normal until February 4 when the shell showed faint mottling which slowly increased until 12 adult parasites emerged on March 10, 42 days after the egg was collected. Eggs of *Calpodes ethlius* occurring in large numbers on canna leaves at Orlando on February 17 were found to be almost 100% parasitized and though most of the parasites had emerged, enough were obtained from the several dozen eggs collected to determine them as the same species attacking the eggs of *Lerema accius*. The parasite was described by Girault* from specimens reared from eggs of *Eudamus proteus* taken in the same vicinity and at the same time it was found attacking the eggs of *Lerema accius*.

Microdus sp. A small dwarfed larva of *Lerema*, taken in the field at Lakeland, April 10, gave forth on the 15th a hymenopterous grub which, after spinning a few threads, pupated in a corner of the box in which its host had been confined. The pupa was 8 mm. long, naked, white except for the eyes and ocelli which darkened as development proceeded. On the 24th the thorax turned yellow, and the adult emerged on the 26th. The adult, which proved to be a female, had a reddish-brown head and thorax, yellow abdomen and black wings.

Euplectrus insuetus Gahan. An undersized yellowish larva taken in the field at Lakeland, April 10 almost at once gave forth 16 white grubs which moved a few millimeters from the dead body of their host and transformed to naked pupae attached to the bottom of the box with their ventral sides uppermost. On the 23rd the adults, small Chalcids, emerged. They are black except for the dark eyes and the legs and cephalic half of the abdomen which are pale yellow. From this material the species was described by Mr. A. B. Gahan† as new.

Investigations during the more entomologically active part of the year would undoubtedly reveal more parasites concerned in the control of this species and it seems likely that the ordinary scarcity of the larvae may be attributed to parasitic agency.

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*Ent. News, Vol. 27, p. 6.
†Proc. U. S. N. M. Vol. 48, p. 164.

CONSIDER THE FLY

The tops of the maples are red with buds; the warm forest glades are dotted with violets and white forget-me-notes *(Houstonias);* an occasional sedge, and in the more sunny spots the Sheep Sorrell *(Oxalis),* are in bloom; and in the deeper shade the Twin Flower. It is early spring. (January 15.)

And as we rest here in this sunny glade in the forest Muscus domesticus comes to keep us company. In our towns we call him the "Typhoid Fly" and hire sanitary officers to deal with him, to wage unceasing war against his young. In our dwellings we call him the "House Fly." We screen against him. We trap him. We poison him. We swat him. But here in the woods he is a harmless, sociable fellow—and so hardy!—the first insect to crawl out on a cold morning, a real harbinger of spring. He does not bite like his cousin the Stable Fly. And why blame him for carrying our filth about? It is we who furnish him with his germs. Like too many of us humans he has been spoiled by too much "civilization." Clean up our towns and barns and he would cease to be a menace. Would he cease to exist? Probably not, for I read that on some barren South Pacific island, where the only vertebrate animal to furnish him manure is a species of rat, he is present in abundance. Verily he is a hardy rascal.

THREE SCALES NEW TO FLORIDA

Mr. Geo. Merrill has recently added to the list of the scale insects of Florida three species, as follows:

Gymnaspis aechmeae Newst. was collected from Bromeliaceae at Little River by Mr. Jeff Chaffin. It has also been taken at Gotha.

Targionia sacchari (Ckll.) was taken from sugar cane at Miami by Mr. E. L. Kelly.

Lepidosaphes camelliae Hoke—Camellia Scale. On Camellia Japonica. From Oneco to Tallahassee, Alabama, Georgia and Mississippi.

WHAT'S IN A NAME? SOMETIMES CONSIDERABLE

A recent correspondent expresses himself as follows concerning the new fumigant for borers in peach trees: Paradichlorobenzene.

"Say, why couldn't the inventor have simply named the stuff 'borer assassinator'; or, if he had to have a long name for it, called it "Sickhimandgoinyourlengthandgethim benzene'? And then we laymen could analyze the name."—C. A. Finley.

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